American Fern Journal 101(4):317–318 (2011)

Shorter Notes

Herbivory on *Pecluma pectinatiformis* (L.) Price (Polypodiopsida) by Caterpillars of *Argyrosticta* Hübner (Lepidoptera) – a Possible Case of Mimicry?—Field work in a mixed humid forest with *Araucaria*, at the beginning of the austral Fall season (April), in the Northeastern region of the State of Rio Grande do Sul, Brazil (Princesa dos Campos, ca. 28° 56′W and 50° 28′S, ca. 800 m alt.), revealed herbivory by caterpillars on fronds of *Pecluma pectinatiformis* (L.) Price (Polypodiaceae). This fern occurs in forested areas as an epiphyte, occasionally on rocks or on the ground, in Brazil (South and Southearn regions), Paraguay and Argentina. Spore morphology, together with sporophyte description, illustrations, data on the ecology and distribution of this species in the State of Rio Grande do Sul were presented by Lorscheitter *et al.* (Palaentographica, 270: 57–60. 2005).

On some plants damage to the laminar tissue was observed (Fig. 1), and on closer examination the herbivorous caterpillars were found. The caterpillars were overlooked on a first casual observation due to their coloration pattern, which, to some extent, resembled a fertile pinna (abaxially) of the *Pecluma* plant. The pattern consists of a reddish line with black longitudinal portions in the middle of the dorsal surface (such as a central "midrib"), presenting on each side a sequence of white and yellow segments forming a striped line, somewhat interrupted by dark semi-circular spots (curved stripe) close to each yellow segment at the inner side. This produces a visual pattern that mimicks a fertile segment of the fern with its yellowish mature sori before the release of

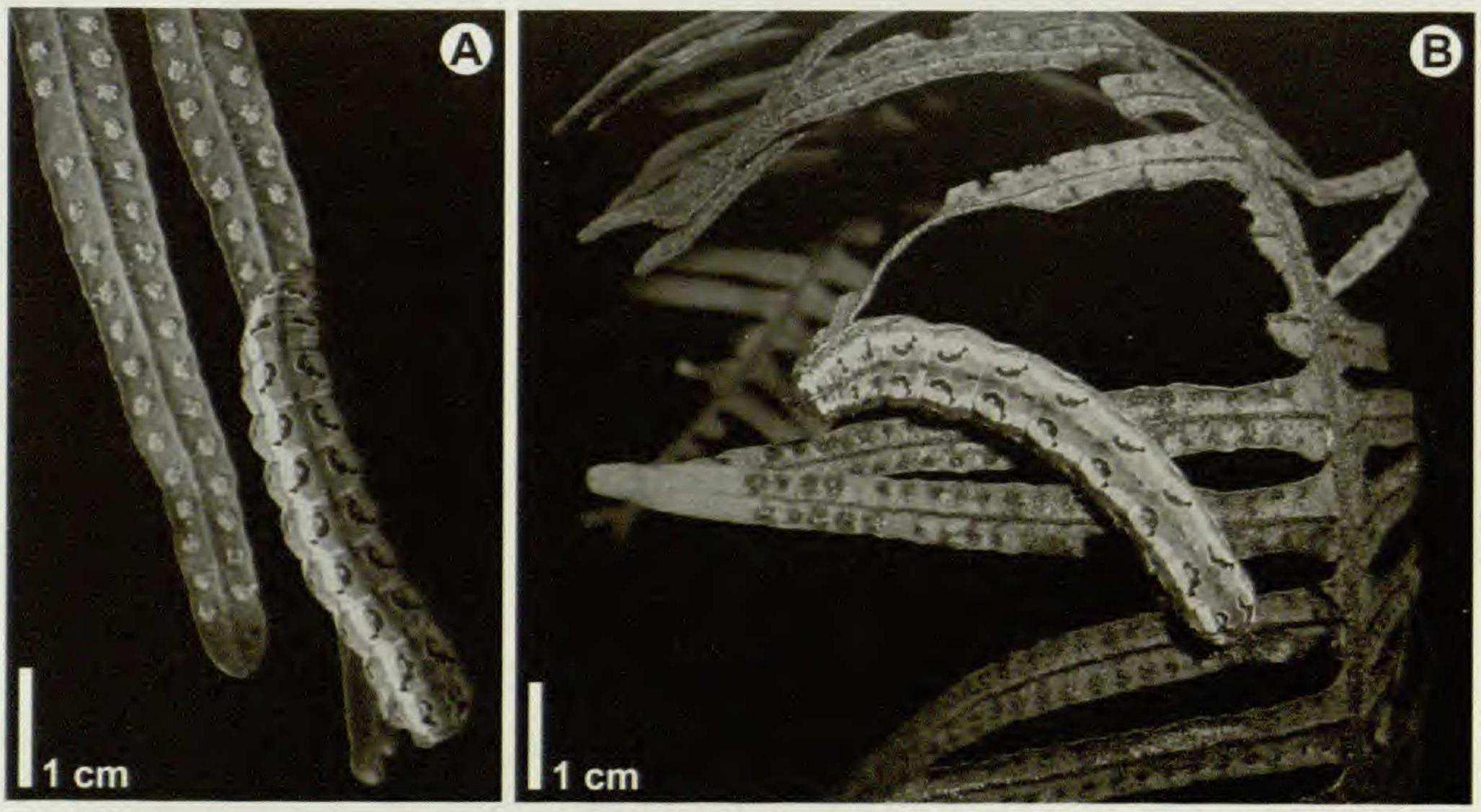

Fig. 1. *Argyrosticta* herbivory on *Pecluma pectinatiformis*. A. Detail of the *Argyrosticta* caterpillar. B. Section of the frond with tissue damage (color images available from corresponding author).

the spores. It is also possible that the dark semicircular marks simulate the incisions between adjacent pinnae, when the animal is over the reddish-brown frond rachis.

The images in Fig. 1 were taken after disturbing the caterpillar, but the animal tends to stretch while feeding, thus having a width similar to that of the pinnae. Feces produced by the caterpillar dissolved in water and observed using an optical microscope, revealed the presence of spores morphologically corresponding to those of host plant. On a isolated plant, the development of one of these caterpillars was followed for 14 days (no molting or changes in the color pattern were observed) up to the pupa stage (in the humic soil substrate), and hatching after another 28 days as an adult moth. Entomologist Alfred Moser, classified the insect as a *Noctuidae*, genus *Argyrosticta* Hübner (1821) [cf. *A. meres* (Druce, 1903) under investigation]. All stages were documented through digital images. A voucher has been deposited at the ICN Herbarium in Porto Alegre (ICN 167777).

A rapid survey of 32 herbarium sheets of this species revealed 15 with damages to the laminar tissue which could be attributed to herbivory. However, attempts to find more carterpillars in the field, on different occasions, were unsuccessful. There are still only few records of this kind of interaction with neotropical ferns, while this subject opens interesting questions and chalenges for future research (see Mehltreter *in* Mehltreter *et al.*, *Fern Ecology*, Cambridge University Press, p. 232–235. 2010).

The authors thank the Conselho Nacional de Desenvolvimento Científico e Tecnológico – CNPq and the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – CAPES (grants and field work support). Special thanks are due to Alfred Moser (São Leopoldo-RS, Brazil) who kindly volunteered to identify the zoological material. Cristiano Buzatto provided welcome help with the digital images. Dr. Joanne Sharpe as well as anonymous reviewers contributed valuable suggestions.—MICHELLE H. NERVO (corresponding author), Pós-graduação em Qualidade Ambiental, Univ. Feevale, 93352-000 Novo Hamburgo–RS, Brazil (email: mi_nervo@yahoo.com.br); PAULO G. WINDISCH, bolsista Produtividade CNPq. Univ. Federal do Rio Grande do Sul, PPG - Botânica, 91540-970 Porto Alegre–RS, Brazil; SUZANA SEIBERT, Pós-graduação em Biologia, Univ. Vale do Rio dos Sinos, 93.022-000 São Leopoldo – RS, Brazil.